

INTRODUCTION

- Hip hop dance competitions are a popular component of hip hop dance culture, but little research has been done to inform what judges are looking for in the winning groups.
- Judging criteria is often unreliable due to a lack of standardization.
- Synchrony has aesthetic appeal in hip hop dance, but it is unclear how crucial it is in a competition setting.
- We hypothesized that synchrony is a major factor, and that the competition winner would be the most synchronized hip hop routine.

QUESTIONS

- Can we predict the winner of a hip hop dance competition using an objective measure of synchrony?
- Can audience members with or without hip hop training predict the winner?

METHODS

- We hosted a hip hop dance competition in the LIVELab where small groups of dancers competed, and judges determined the winner.

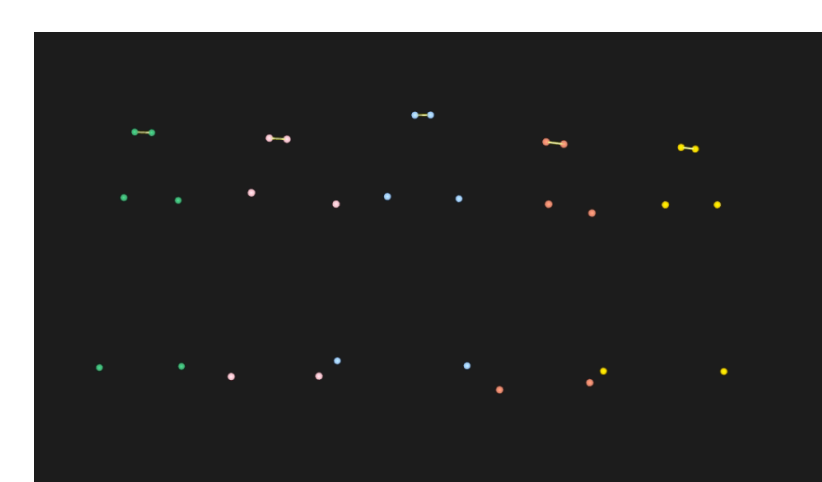
Participants:

- Competing dancers (n = 30) in six groups (five/group).
- Expert Judges (n = 5).
- Audience members (n = 75).



Data Collection:

- Qualysis motion capture system**
 - Markers on head, wrists, and ankles
- Judges scored:**
 - Level of choreography, creativity of choreography, technique, timing, stage presence, and overall cohesion
- Audience scored:**
 - Overall mark out of 10
 - 1st place vote
- Participant demographics**
 - Dance and music training



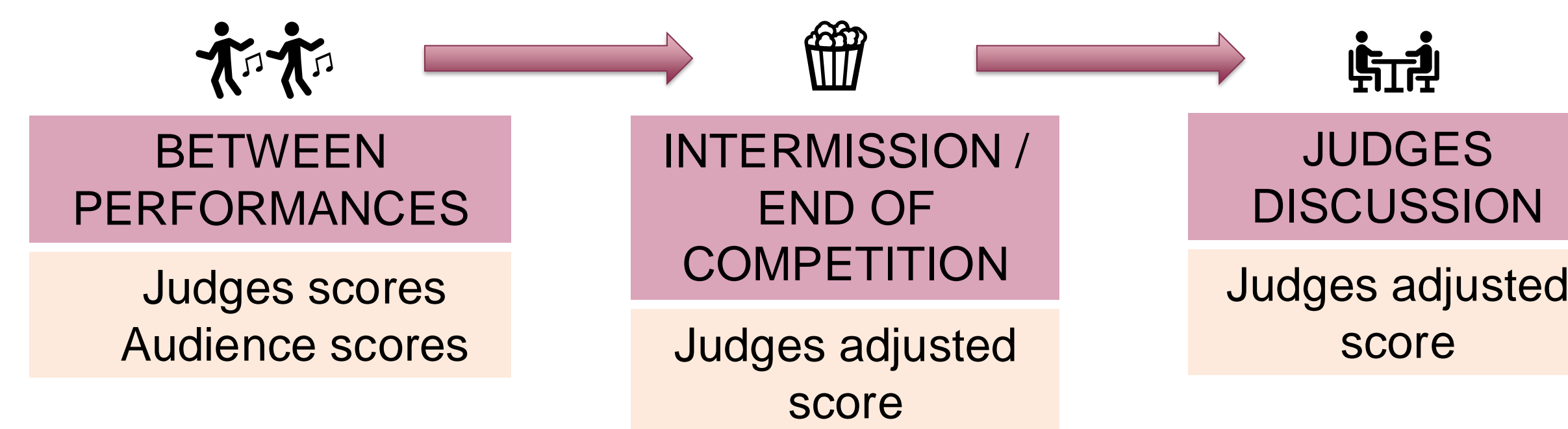
Synchrony Measure:

- Velocity calculated from 3D motion capture data.
- Cross correlation of velocity between each pair of dancers (lag = 0).

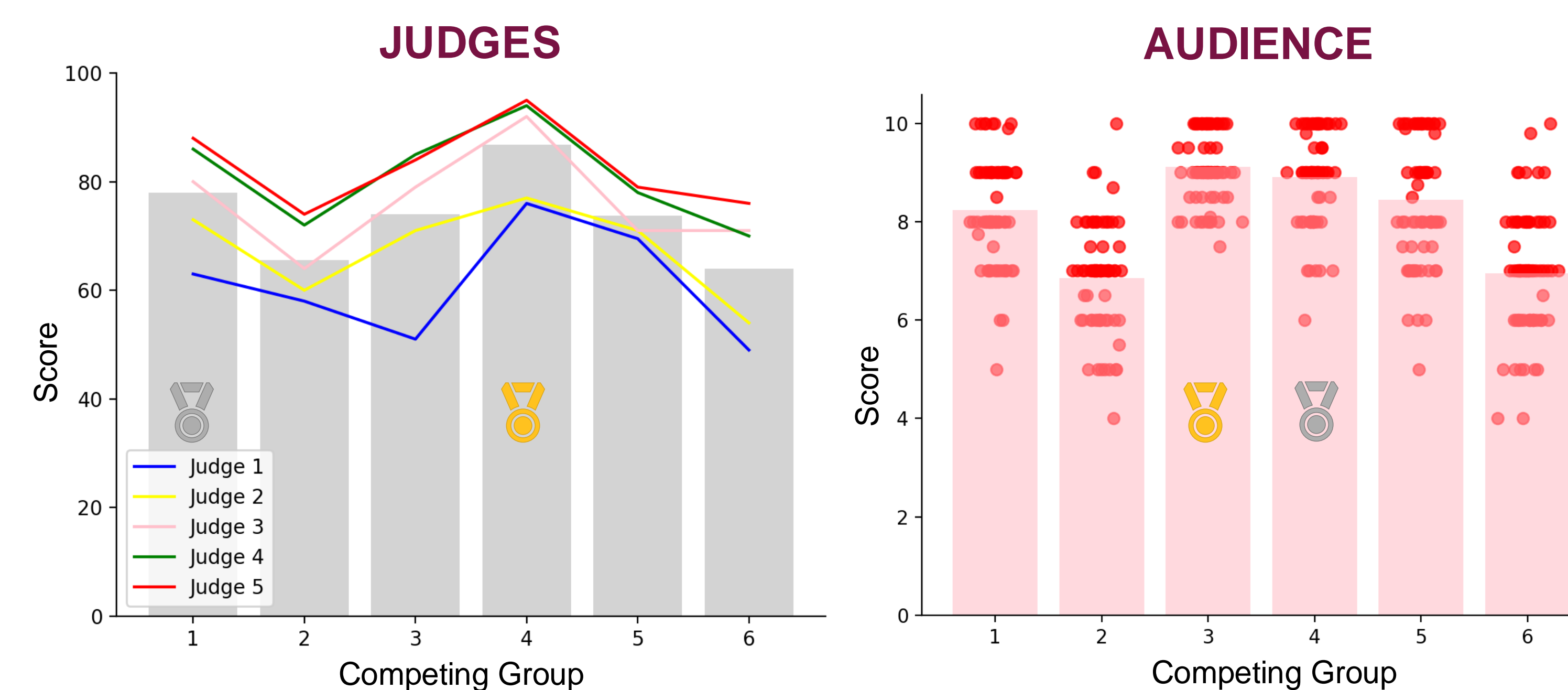
COMPETITION RULES

Choreography Rules:

- No overlap of dancers.
- One song per group.
- 2:20-2:40 min. in length.
- 15-20s section of unison movement (no formation, direction, or level changes).

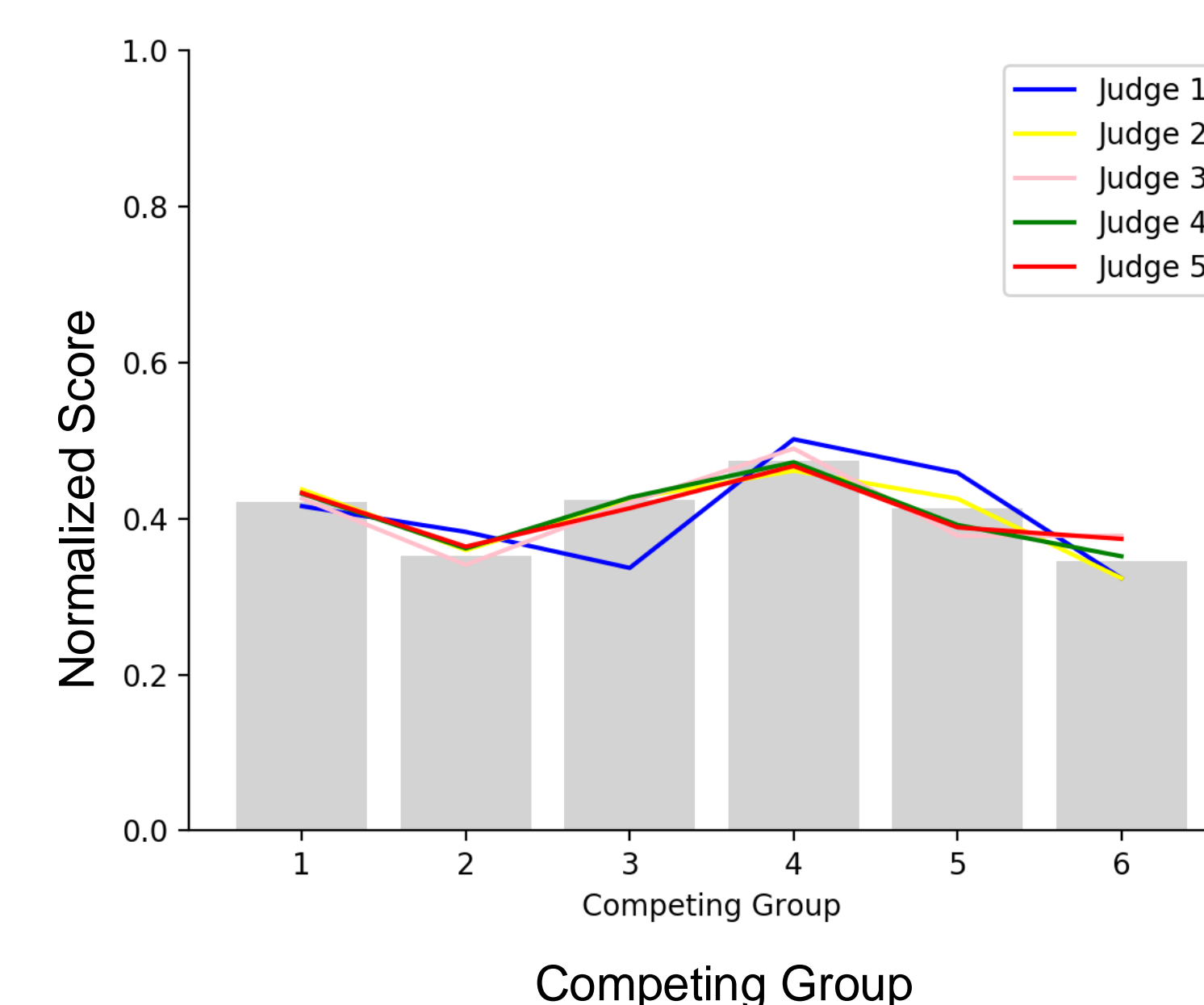


SCORING RESULTS

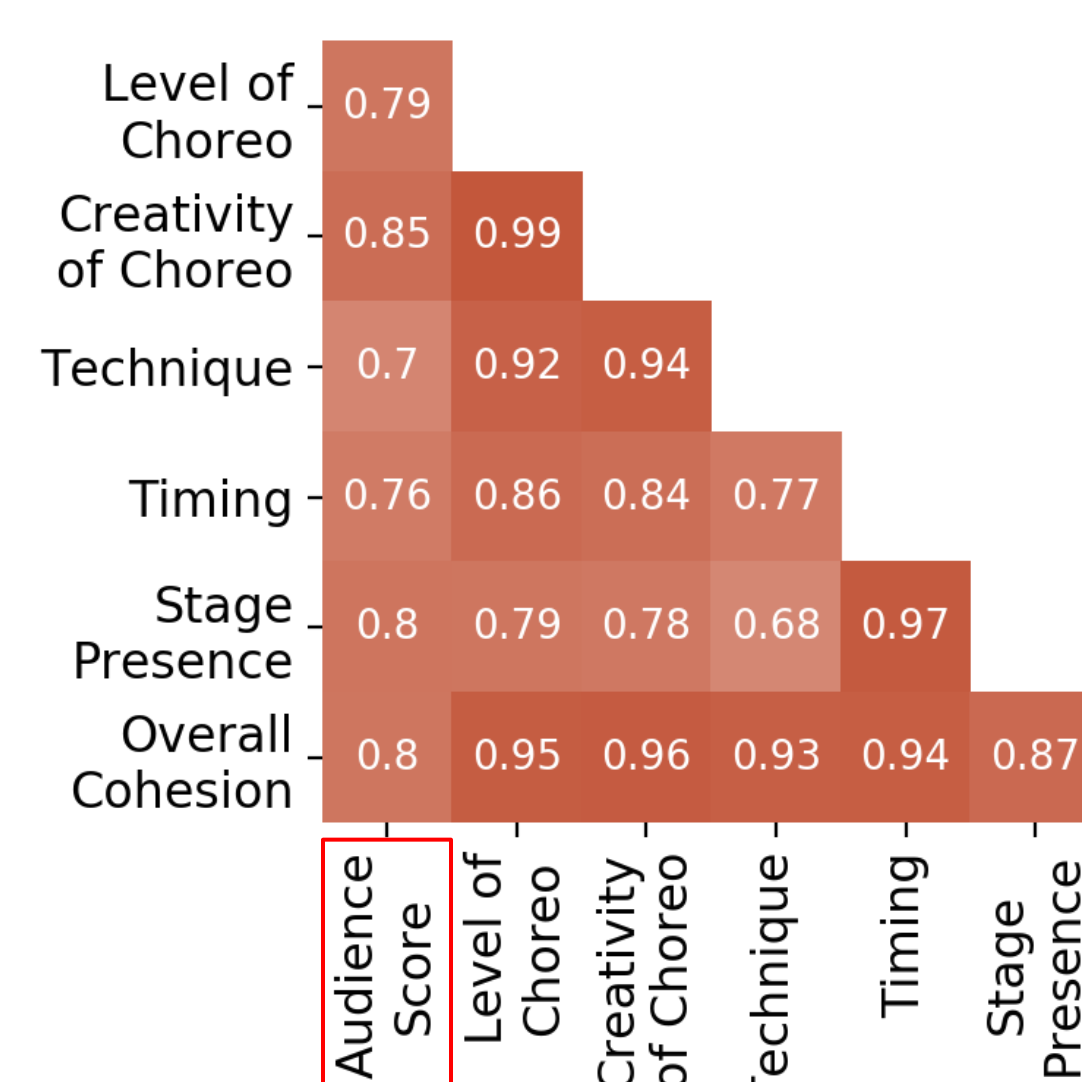


- The judges chose a different winning group than the audience.
- Judges were very consistent with their relative scores. Intraclass correlation coefficient (ICC3K) = 0.94.

Normalized Judges Scores



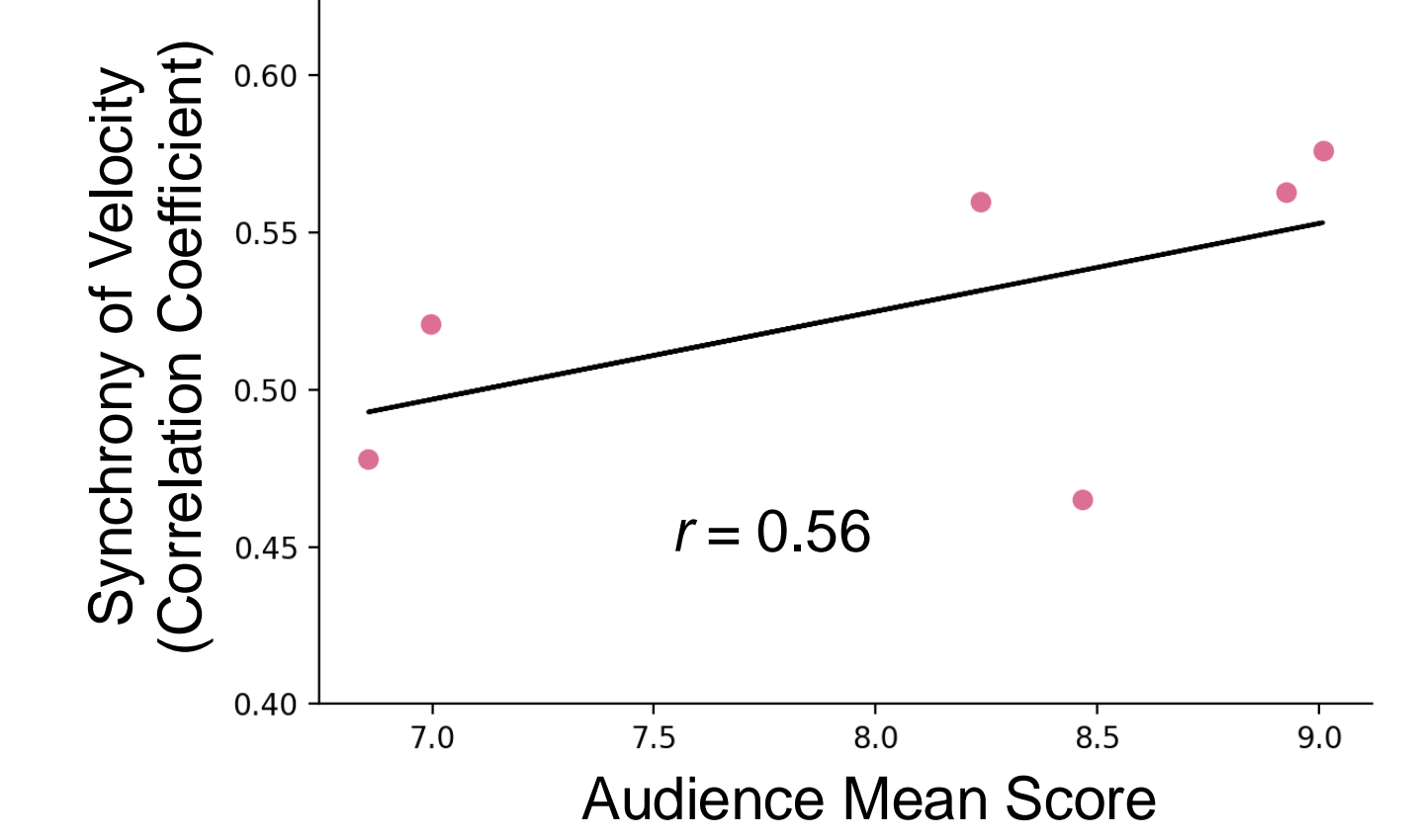
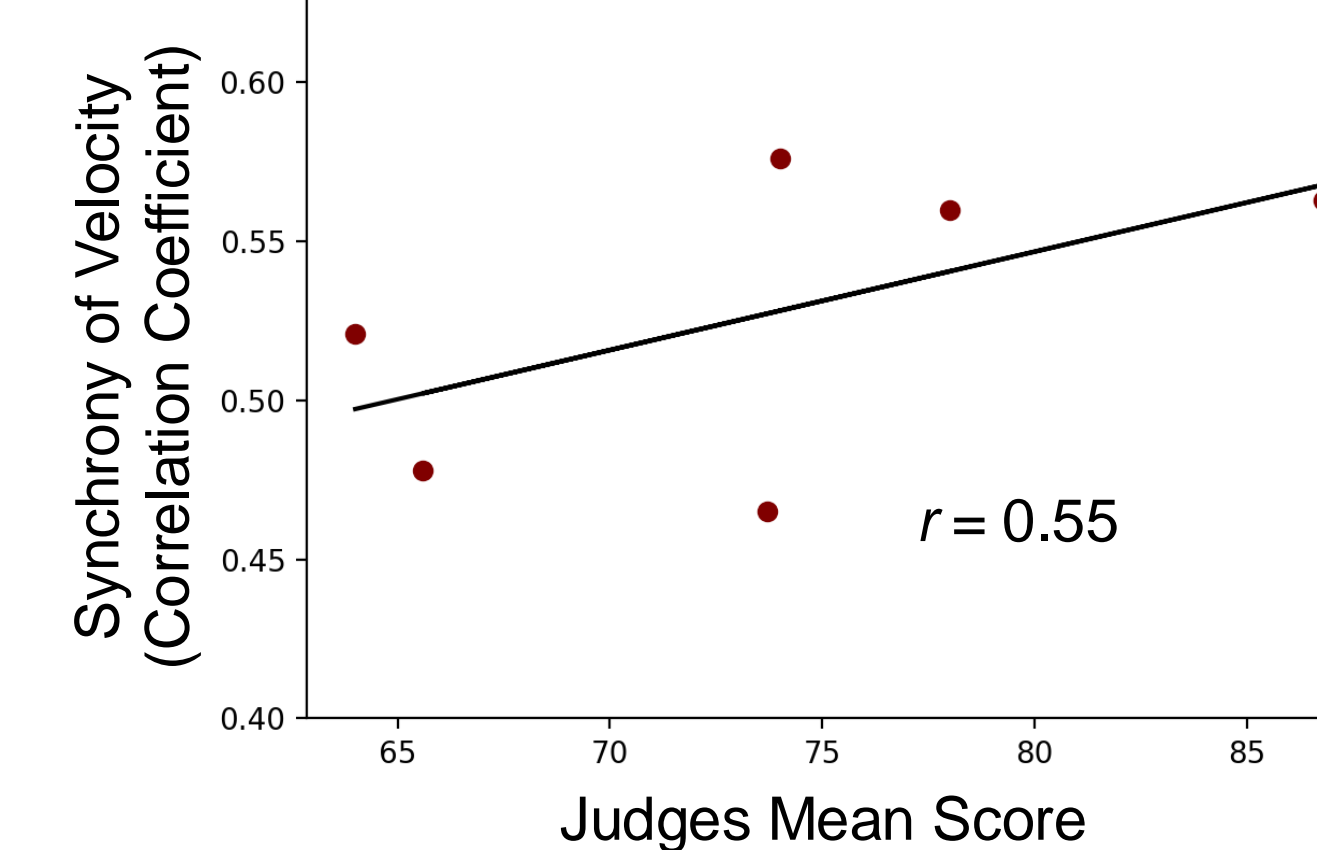
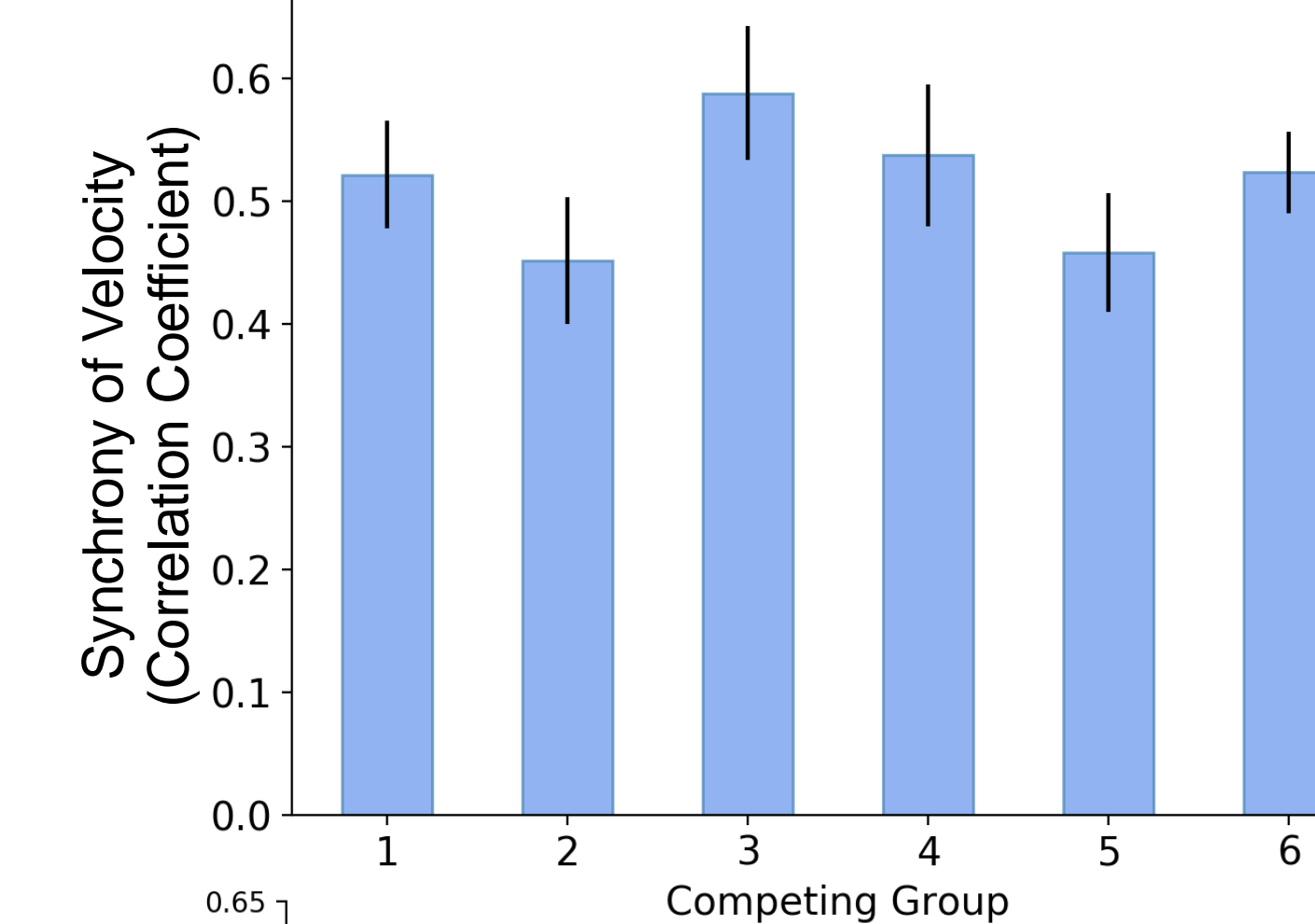
Correlations of Judges' Subsections to Audience Scores



- Creativity of choreography had the highest correlation coefficient in relation to the audience overall score.

THE IMPORTANCE OF SYNCHRONY

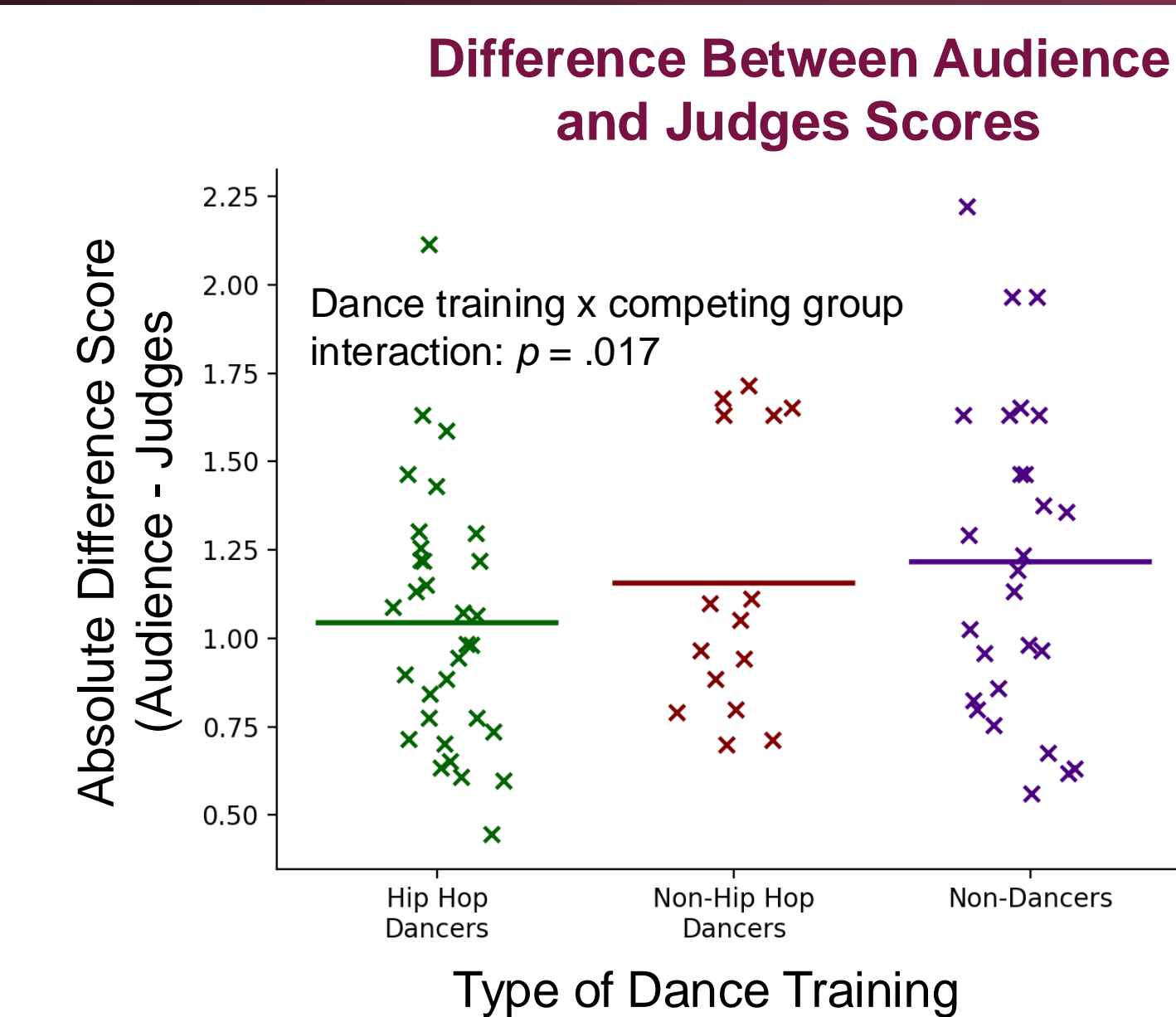
SYNCHRONY



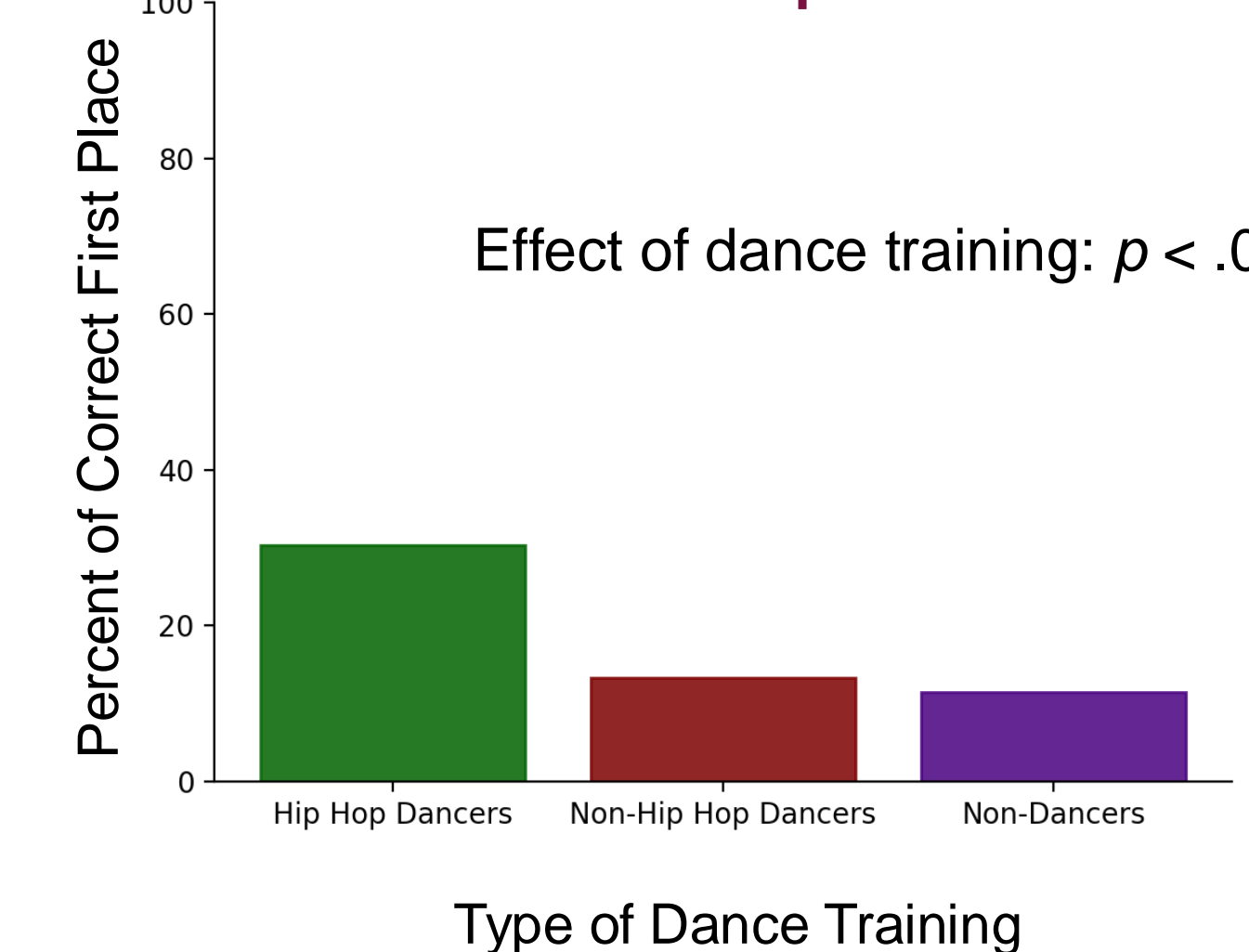
- The most synchronized group was the **audience's** top score, but not the judges' top score.

- Synchrony was positively correlated with both the judges scores and the audience scores.

AUDIENCE DANCE TRAINING



Proportion of Correct Winning Group Predictions



- Audience hip hop dancer ratings were more similar to the judges in both their scores and their predictions of the first-place winner, compared to non-hip hop dancers and non-dancers.

IMPLICATIONS AND FUTURE DIRECTIONS

- Expert judges are highly consistent when scoring multiple groups.
- We can predict the **audience's** top score based on synchrony, but the relationship between synchrony and scoring is complex.
- Audience members and judges **differed in scoring**, suggesting the audience may be more influenced by creativity and the judges are better able to score technique.
- Hip hop dance training **increases audience similarity to the judges**.
- Findings contribute to the standardization of hip hop judging criteria and informs dancers to **focus training beyond just synchrony** when preparing for competition.